

Michigan  
Department  
of  
Education

High  
Standards  
for Michigan's  
Students

# Achieving & Succeeding





**A**ll parents want their children to be successful. Knowing what schools expect is an important first step in helping children succeed.

### Expecting More

Getting children prepared and ready to take their place in the world is challenging. The knowledge and skills that were needed to land a well-paying job 10 or 20 years ago might be adequate for a minimum-wage job today.

Requirements for graduates of Michigan schools have changed to reflect the changes you find all around you. For example, in today's job market an applicant for a job in computer programming or graphic design may be competing with applicants from all over the world.

“Those of us who employ Michigan's graduates recognize the economic benefits of higher standards: Good jobs require good skills, and the place to begin preparing students is in our schools.”

*David R. Whitwam  
Chairman and CEO  
Whirlpool Corporation*

### Making Learning Count

In 1995, the Michigan Department of Education asked parents, business people, educators, and university professors to tell us what they thought students should know and be able to do to be successful in the 21st century. What skills will be needed to get an entry-level job after high school or to get into a university, community college, or trade school? Their answers were used to develop a set of learning expectations called standards. Standards help educators in Michigan schools focus on teaching what students need to know and then making sure the students can use what they learn.

**“I always ask my students to go one step further, and then they surprise themselves at what they can do!”**

*Joan Garretson  
Michigan Teacher of the Year*

### Achieving More

Just as Olympic athletes continue to break records we once thought were unbeatable, high standards increase student achievement beyond former expectations. In fact, students themselves admit they can do more than they are asked to do — and are proving it. Since standards were raised, student scores in reading and math have been improving steadily.

In Michigan, public education is about giving everyone a fair chance to succeed. Expecting high achievement from all students helps ensure they are equally prepared for success.

### Inside This Brochure

This brochure describes the relationship between high academic standards and the future success of Michigan students. It provides an overview of our standards in English language arts, mathematics, social sciences, and science. For each of these content areas, you will find charts that describe the topics students are studying, such as civics and economics in social studies. You'll also find a Michigan Education Assessment Program (MEAP) question in each area that shows how students demonstrate they have grasped a concept and can use the information.

For each standard, there are even more detailed learning objectives called **benchmarks**. Teachers, schools, and school districts use these benchmarks to develop lesson plans for the classroom and to match their curriculum with this common set of expectations.

To find all of the standards and benchmarks included in the Michigan Curriculum Framework, you can visit this Web site: <http://cdp.mde.state.mi.us>. MEAP information may be found at <http://www.meritaward.state.mi.us>.



# English Language Arts

While most of us do not use the term English language arts in our daily lives, we constantly use its skills, such as *listening* to a weather report, *viewing* the morning news on television, *reading* the mail, *writing* a report for work, or *speaking* clearly to describe a project.

We rarely, however, use only one of these skills at a time in the real world. For example, we both listen to and watch a movie; we read a survey and write our answers to the questions. In learning to read, our children build on their knowledge of words they have heard and spoken themselves, and

then they use writing to practice combining letters, words, and ideas. The English language arts standards organize the skills we use into four large categories: communication, literature and understanding, genre and craft of language, and skills and processes.

## English Language Arts: An Overview

Category	Communication	Literature and Understanding	Genre and Craft of Language	Skills and Processes
Standards	<p>Read and write with fluency.</p> <p>Use methods such as phonics, vocabulary, sentence structure, and comprehension strategies to understand what is read.</p> <p>Develop confidence in speaking and writing skills.</p>	<p>Read, view, and listen to good literature.</p> <p>Describe how various cultures are represented in stories and books.</p> <p>Explore and analyze themes in written material.</p> <p>Apply knowledge, ideas, and issues from reading to personal life.</p>	<p>Use punctuation, capitalization, and correct grammar.</p> <p>Convey ideas through graphs; storytelling; video; and other written, oral, and visual methods.</p> <p>Explore and use creative written, oral, and visual methods to express ideas.</p>	<p>Draft and revise written materials.</p> <p>Use a variety of skills to understand the meaning of reading materials.</p> <p>Investigate problems using resources such as the Internet.</p> <p>Apply standards to evaluate a variety of texts.</p>

This chart provides an overview of some of the skills students will develop in each of the English language arts areas.



Sample Answer:

**Q:** There is a first time for everything. It could be the first day in a new school or running a race for the first time. Write about a first.

This sample fifth-grade MEAP problem is designed to test a student's ability to convey ideas through writing. The answer would receive the maximum number of points.

The First Time I was Bitten by a Cat + Went to the Hospital

"Two girls," my mom said to my sister + me "When Alley comes up you stay away from her." There was fright in my mom's voice.

My mom slowly opened the creaky wooden door. I suddenly saw two bright green eyes peering out from the door. Alley walked out, looked around + started rubbing my mom's leg, purring.

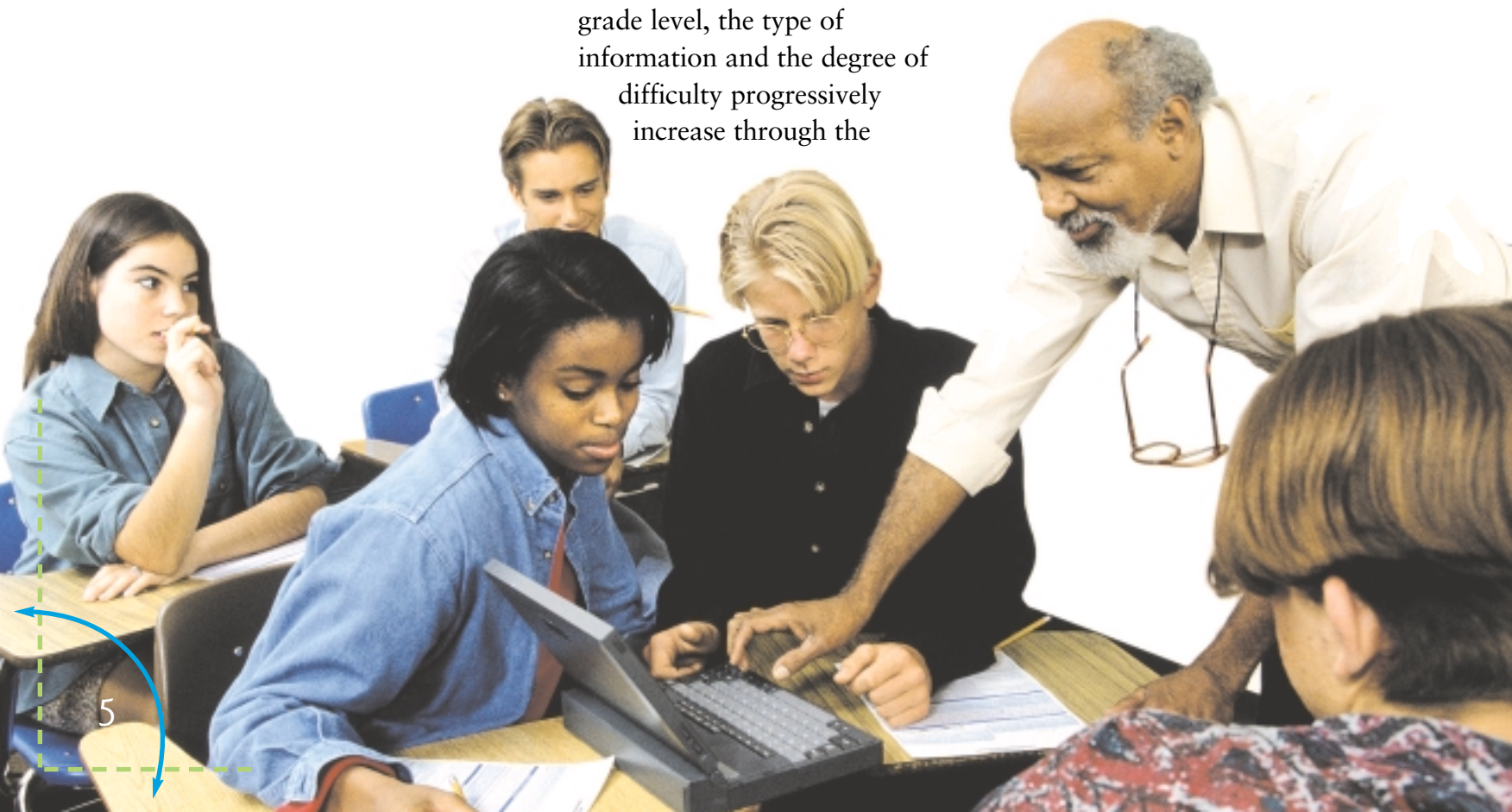
Before anyone could say anything, I scampered to where the cat was + sat on the floor next to her.

Balancing a checkbook. Making or receiving change.  
Determining what is needed to qualify for a home loan.  
Math is a constant and important part of our lives.

The Michigan standards require that students use math on many levels: from basic addition to problem-solving; from recognizing the patterns in a tide chart to making predictions based on observing patterns.

The first thing you may notice about the mathematics standards is that there are six categories (see chart). While the six categories remain the same for children at every grade level, the type of information and the degree of difficulty progressively increase through the

elementary, middle, and high school years. Math doesn't start with addition and end with calculus. Elementary students learn concepts from algebra and probability, as well as how to subtract and divide fractions. The goal is to have students learn to think mathematically so they understand *how* to solve problems, rather than memorize ways to solve problems.



Mathematics: An Overview

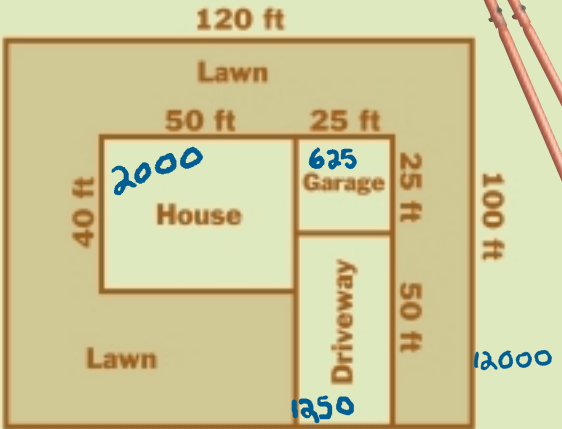
Category	Patterns, Relationships, and Functions	Geometry and Measurement	Data Analysis and Statistics	Number Sense and Numeration	Numerical and Algebra Operations; Analytical Thinking	Probability and Discrete Mathematics
Standards	Identify and use patterns.  Identify and describe variations in patterns.	Analyze and describe shapes.  Identify the location of objects.  Measure objects.	Collect, organize, and present data.  Describe and interpret data.  Make inferences and predictions using data.	Understand the meaning of numbers.  Understand the uses of numbers.  Identify relationships between numbers.	Compute.  Use algebra to express and solve problems.	Determine the likelihood of an event.  Solve problems that involve routing, scheduling, sequencing, and networks.

The mathematics problems encountered in our lives are rarely set up in a formula for us to solve. It is up to us to figure out how to solve them.

The problem provided to the right is from the 11th-grade MEAP, and it serves to test students' knowledge of geometry and measurement, as well as numerical and algebraic operations. The student's answer received the maximum points available.

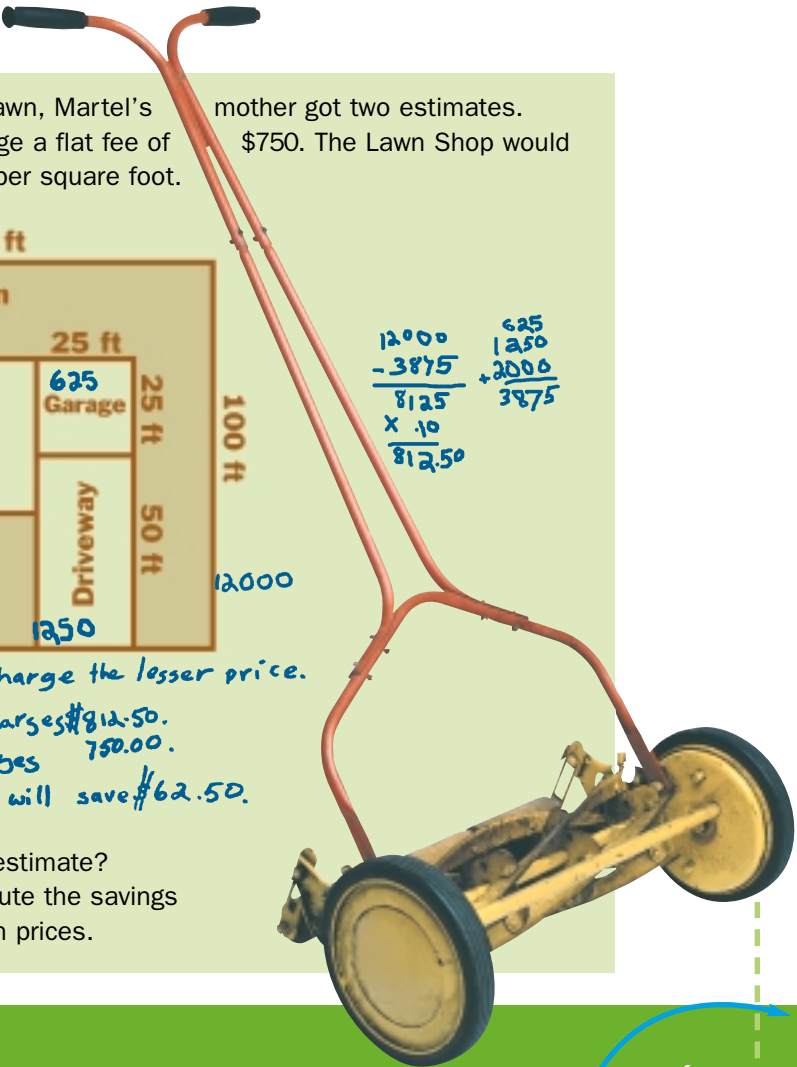
**Q:** In order to reseed their lawn, Martel's mother got two estimates. The Greenery would charge a flat fee of \$750. The Lawn Shop would charge a flat fee of 10¢ per square foot.

Sample Answer:



The Greenery will charge the lesser price.  
The Lawn Shop Charges \$2625.  
The Greenery charges \$812.50.  
Martel's mom will save \$62.50.

What is the LEAST expensive estimate?  
Explain your answer and compute the savings resulting from the difference in prices.



# Social Studies

Graduates of Michigan’s schools will become your neighbors and co-workers. Many of them will be the next generation of teachers, public officials, and civic volunteers. Setting high goals and standards in social studies will help prepare students for their various roles as responsible citizens.

Four of the seven categories within the social studies standards (historical, geographic, civic, and economic) provide the foundation for students to make decisions, whether in their homes, in the voting booth, in town hall meetings, or on the job (see chart on the next page).

As they build this base of knowledge, students

will be challenged throughout their school years to use what they know to become active citizens: analyzing public issues and coming up with solutions, having group conversations to explore policy issues, expressing their own opinions in writing, and participating in community projects for the public good.



## Social Studies: An Overview

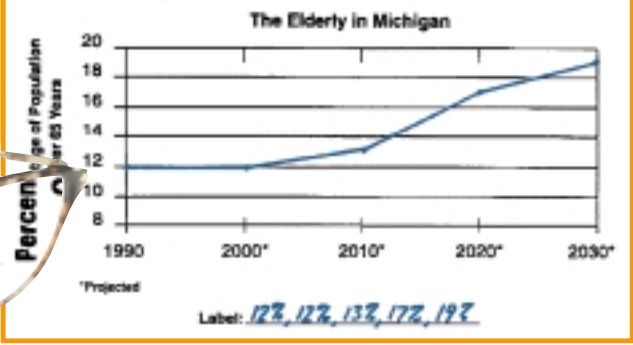
Category	Historical Perspective	Geographic Perspective	Civic Perspective	Economic Perspective	Inquiry	Public Discourse and Decision Making	Citizen Involvement
Standards	Know when events happened.  Understand the past.  Analyze and interpret the past.  Judge decisions from the past.	Know people, places, and cultures.  Interact with the environment.  Understand location, movement, and connections.  Compare regions, patterns, and processes.  Explain global issues and events.	Identify the purposes of government.  Explain the ideals of American democracy.  Describe political and legal processes.  Describe American government and politics.  Understand American government and world affairs.	Explain individual and household choices.  Demonstrate business choices.  Describe the role of government.  Define economic systems.  Describe trade.	Use information.  Conduct investigations.	Identify and analyze issues.  Participate in group discussions.  Express positions in writing.	Demonstrate responsible personal conduct.

The eighth-grade student who answered this MEAP question on demographics received the maximum number of points.

**Q:** Explain and chart the relationship between the percentage of population over 65 years in Michigan and the years shown in the table.

**Sample Answer:**  
*There is a direct relationship because as years go up the percentage of population over 65 in Michigan also goes up.*

Years	Percentage of population over 65 years in Michigan
1990	12%
2000*	12%
2010*	13%
2020*	17%
2030*	19%



# Science

Science is a way of making sense of the natural world — understanding why the dog has such a keen sense of smell, knowing why the cheese left too long in the refrigerator developed mold, and understanding what the doctor means by resistance to antibiotics.

## Science: An Overview

Category	Constructing New Scientific Knowledge	Reflecting on Knowledge	Life Science	Physical Science	Earth Science
Standards	Ask questions.  Design and conduct investigations.  Use sources of information.  Communicate findings using appropriate technology.	Recognize the need for evidence and logic.  Analyze the impact of science and technology on society.  Connect science to other fields.  Recognize contributions of diverse individuals.	Explain growth and function of cells.  Describe life processes, life cycles of living things.  Understand heredity.  Analyze how things change over time.  Investigate relationships of living things within ecosystems.	Identify matter and energy.  Investigate physical, chemical, and nuclear processes.  Demonstrate forces, motion, and machines.  Describe sound and light.	Describe the changing Earth.  Demonstrate uses and sources of water.  Investigate weather.  Understand astronomy.

We all begin our lives as scientists, asking questions about those issues that hold great mystery to us as children: How can this tiny seed make a big pumpkin (life science)? How did Big

Bird get in my television (physical science)? How many stars are there (earth science)? Beginning in kindergarten and continuing through high school, students in Michigan schools will be learning to

use, create, and reflect on the mysteries of life, physical, and earth science. There are five categories in science (see chart).



In science, students must learn to find answers by setting up experiments, even in the elementary grades. The student who answered this fifth-grade MEAP question received the maximum number of points.

**Q: Bill would like to know if the number of hours of sunshine during a given day has any relationship with the highest temperature recorded during that day. How could he set up a test (experiment) that would help him answer the question?**

**Sample Answer:** Bill could record the hours of sunshine and the highest temperature at the same place for about 10 to 20 days. He should do the experiment whenever the season changes.



Helping Your Child Succeed:

# Involvement = Success



**H**elping your child succeed by participating actively in his or her education is one of the best gifts you can give. In fact, research indicates students do better in school when parents are involved and show their children that school matters.



Office of School Excellence

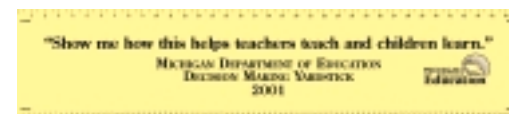
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This publication was developed by using the Department of Education's decision-making yardstick.



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Here are a few steps you can take as an interested parent to ensure that your child is making progress:

- 1.** Make sure your child is healthy, well nourished, and attending school every day. Health and attendance count!
- 2.** Talk to your child every day about what she or he learned in each subject at school.
- 3.** Ask your child's teacher to explain what is being taught in class so that students can meet the standards. Ask for copies of written materials explaining the teacher's expectations for the school year.
- 4.** Learn what the homework policy is. How often is homework assigned in each subject, and how much time should it take to complete assignments?
- 5.** Go over homework with your child to make sure she or he understands the kind of work that is expected. Do the problems require her to write out answers so she can show her thinking? Can he answer problems just by filling in the blanks?
- 6.** Find out what kinds of tests are used in the classroom. Does the teacher have more than one way to show your child is achieving? Do the tests that are being used measure progress in meeting the standards?
- 7.** Make an appointment to talk with your child's teacher about test results. Ask what you can do to help your child learn.

Superintendent of Public Instruction Tom Watkins has created a new publication to galvanize Michigan citizens and rejuvenate the public's involvement in education. *Thirty Ideas in 30 Days* is a compilation of thoughts gleaned from years of experience listening to and learning from others in the private, public, and not-for-profit sectors. During his first 30 days on the job as superintendent, Watkins pulled these ideas together as a beginning step toward establishing a shared vision for quality public education. The complete publication is available electronically on the department's Web site: [www.mde.state.mi.us](http://www.mde.state.mi.us).

This brochure was printed 575,000 times at a per-piece cost of 13 cents.  
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